

CALIFORNIA DENTAL ASSOCIATION

SAN FRANCISCO
2018



Sleep Disorders Should Your Practice Be Concerned



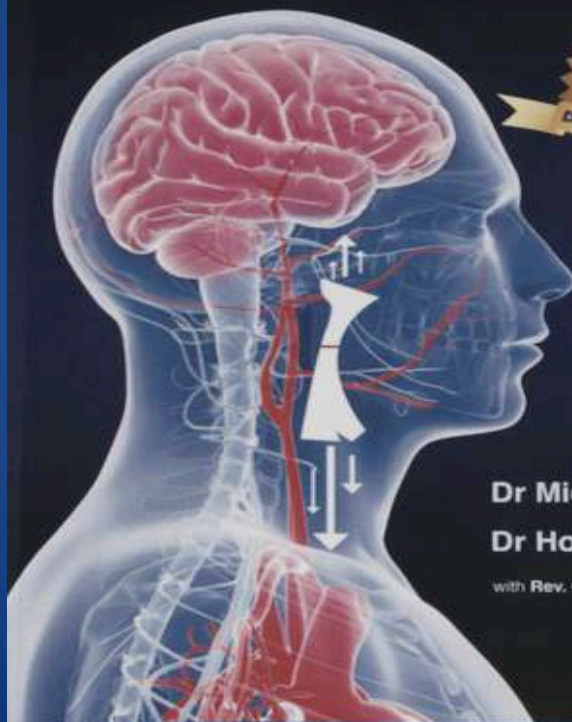
Eugene Santucci DDS, MA, FACD

Disclosure Statement

- I have nothing to disclose regarding association with products or companies

GASP

AIRWAY HEALTH
THE HIDDEN PATH TO WELLNESS



Dr Michael Gelb
Dr Howard Hindin
with Rev. Carol Richardson

Refreshing Sleep

Sharper Mind

Better Mood



Why We Sleep

Matthew Walker, PhD



"A neuroscientist has found a revolutionary way of being cleverer, more attractive, slimmer, happier, healthier, and of warding off cancer—a good night's shut-eye." —*THE GUARDIAN*



Why We Sleep

UNLOCKING THE POWER OF
SLEEP AND DREAMS

Matthew Walker, PhD

What's going on

- 2/3 of the worlds population exhibit disturbed sleep patterns
- Vehicle deaths attributed to disturbed sleep are greater than those from alcohol and drug abuse combined
- What's going on..we're fatigued and so are our patients
- Should we be concerned ? Should our practice be concerned



Do Any of You????

- Wake up feeling tired and have headaches
- Snore, or even wake up gasping for breath in the middle of the night
- Clench or grind your teeth at night
- Wake up frequently to use the bathroom
- Have diabetes, high blood pressure or CVD
- Are overweight/ obese, crave sugar, caffeine
- Feel sleepy during the day/staying awake while driving
- Mental fog, too tired to exercise

You my Friend

- Most likely don't get enough sleep or you have an airway issue that keeps you from sleeping deeply and restfully
- National Institute of Health reports 20% of adults have obstructive sleep apnea of which 90% go undiagnosed
- Women; 40% suffer from Upper Airway Resistance Syndrome, also not diagnosed



- US Public Health Service, National Health and Nutrition Survey 2005-6 reports;
- 53% of men snore 3 times /week
- 14.3 % snore and gasp
- 6.1% are diagnosed with OSA
- 70% have some sort of sleep disordered breathing



Co-morbidities from Sleep Disordered Breathing

- Headaches, snoring, difficulty sleeping
- Neck, jaw, or ear pain
- Sugar cravings, junk food cravings
- Obesity, diabetes
- Cardiovascular disease
- Difficulty focusing mentally
- Excessive daytime sleepiness, low energy
- Wake up feeling unrefreshed

SF Chronicle Feb 7 '18

NATION



Mark Lennihan / Associated Press 2017

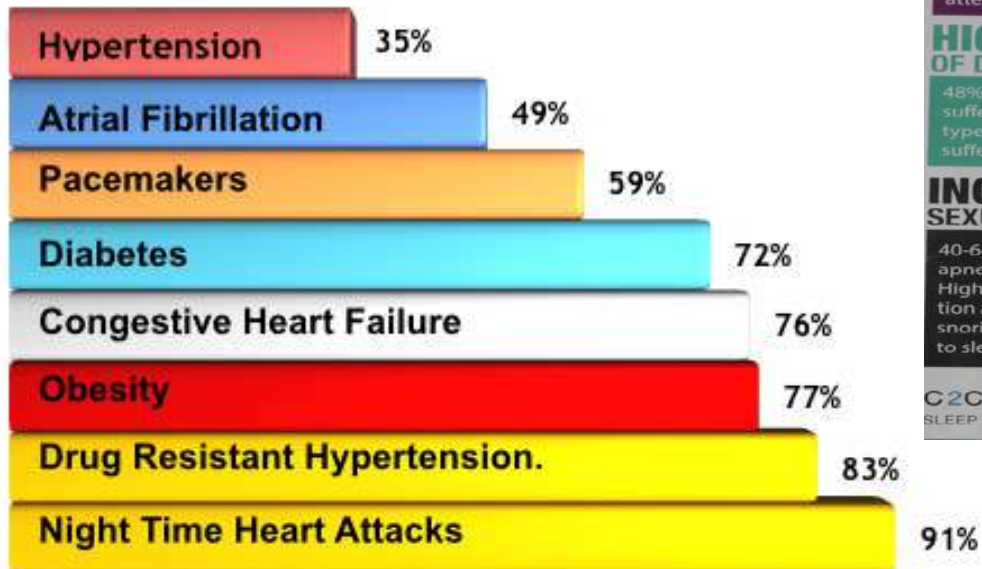
An injured passenger is taken from a Brooklyn terminal after a Long Island Railroad train crashed last year, killing one person and injuring some 200.

TRAIN ACCIDENTS

Crashes blamed on lack of apnea testing

Should we be concerned?

Diseases Associated with OSA



SLEEP APNEA

AFFECTS YOUR WHOLE BODY

HIGHER RISK OF DEPRESSION & ANXIETY

People with depression are five times more likely to suffer from sleep apnea, in addition to insomnia and poor sleep.

IMPAIRED COGNITION

Sleep deprivation slows average Reaction Time by up to 30% and increases attention lapses by 150%.

HIGHER RISK OF DIABETES

48% of type 2 diabetes sufferers and 86% of obese type 2 diabetic patients suffer from sleep apnea.

INCREASED SEXUAL PROBLEMS

40-64% of males with sleep apnea have erectile dysfunction. Higher rates of sexual dysfunction also found in families. Loud snoring can force bed partners to sleep in separate rooms.

HIGHER RISK OF STROKE

65% of stroke patients have sleep apnea.

HIGHER RISK OF HEART DISEASE

40-83% of patients with hypertension have sleep apnea. Studies show sleep apnea increases your heart rate and blood pressure.

WEIGHT GAIN

Lack of sleep (5 hours per night) can cause snacking and weight gain of about 2 pounds in under 1 week.

HIGHER RISK OF CAR ACCIDENTS

36 percent of people drive drowsy or fall asleep while driving.



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ADA American Dental Association®
America's leading advocate for oral health

ADA News

Current Issue

Sleep-related breathing disorder treatment outlined in new policy

October 31, 2017

By David Burger

Atlanta — Dentists are the only health care provider with the knowledge and expertise to provide oral appliance therapy, according to Resolution 17H-2017 passed by the ADA House of Delegates at ADA 2017 – America's Dental Meeting.

"The passage of the sleep-related breathing disorders policy statement is the culmination of several years of work on this issue through the combined efforts of the Council on Dental Practice and the Council on Scientific Affairs," said Dr. Craig Ratner, chair of the ADA Council on Dental Practice. "The consensus-based process engaged all interested parties. The end result is a comprehensive policy that can help dentists on the front lines help their patients with these potentially life-threatening disorders. Proper recognition and treatment can help prolong the health and lives of our patients."

The policy emphasizes the dentists' role in screening sleep-related breathing disorders as significant since dentists are often the first to identify symptoms and discuss medical and dental history with the patient. The policy recognizes the importance of referral of at-risk patients to a physician for diagnosis and treatment. It emphasizes that dentists are the only health care provider with the knowledge and expertise to provide oral appliance therapy for those individuals with mild or moderate sleep apnea who are intolerant of continuous positive airway pressure (CPAP) therapy.

According to the policy, the dentist's role in the treatment of sleep-related breathing disorders includes, but is not limited to, the following:

- In children, screening through history and clinical examination may identify signs and symptoms of deficient growth and development or other risk factors that may lead to airway issues. If risk is determined, intervention through medical or dental referral or treatment may be appropriate to help treat the disorder and/or develop an optimal physiologic airway and breathing pattern.
- When oral appliance therapy is prescribed by a physician through written or electronic order for an adult patient with obstructive sleep apnea, a dentist should be the one to fabricate an oral appliance.

- Dentists treating sleep-related breathing disorders should continually update their knowledge and training of dental sleep medicine with related continuing education.

The resolution stated that once the policy is adopted, the Council on Dental Practice will sponsor continuing education opportunities to educate the profession about sleep-related breathing disorders as well as inform the council's medical colleagues of the policy and develop information for the public on dentistry's role in sleep-related breathing disorders.

More information is available at [ADA.org/sleepapnea](https://ada.org/sleepapnea).

Should our dental offices be concerned?

Why We Sleep

UNLOCKING THE POWER
OF SLEEP AND DREAMS

Matthew Walker, PhD

SCRIBNER

New York London Toronto Sydney New Delhi

Why we Sleep

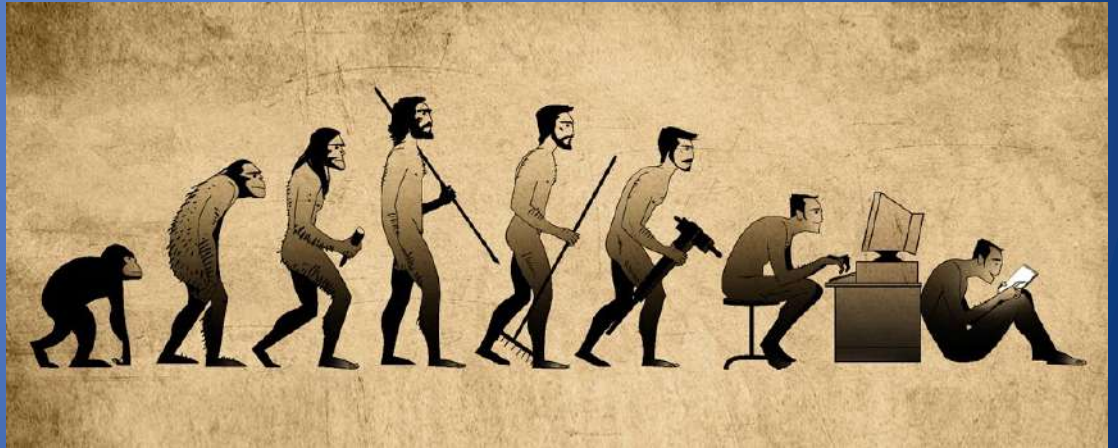
- Matthew Walker's great book states;
- Since the dawn of time, every studied species sleeps, WHY?
- One of the last great biological mysteries of our times.
- Great minds struggled with this need, all failed
- Francis Crick, Freud, Quintilian



- Is sleep an addiction we don't understand
- We understand why we eat, drink, reproduce

“If sleep doesn't serve an absolutely vital function, then it's the biggest mistake the evolutionary process ever made.”

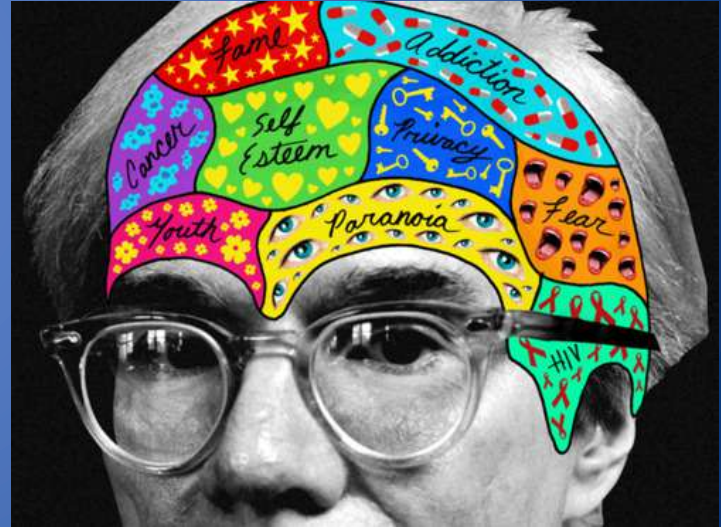
Dr. Allen Rechtschaffen



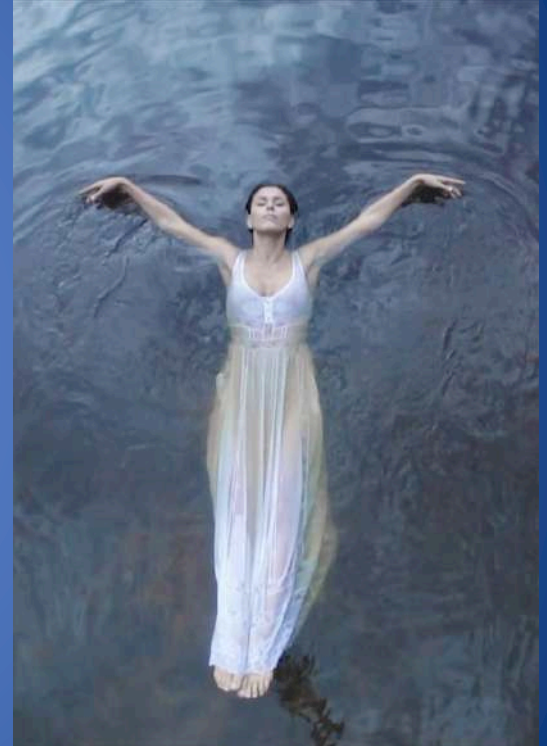
Evolution Doesn't Make Mistakes

Every 24hs/ sleep benefits us in two ways:

- **Nurtures the Brain;**
- helps us to memorize facts, learn, make logical decisions and choices, recalibrates our emotional circuits
- Dreams encourage a neurochemical bath that soothes painful memories, improves creativity encourages short term memories to long-term.



- Every 24 hours,
- **Sleep nurtures the body;**
- Helps our immune system to fight off malignances, balances insulin and floating glucose, controls appetite, balances gut bacteria, exhibits a positive effect on CVD and heart health



Are there any bodily functions not helped by restful sleep?

- Not that we're aware of
- Presently we average about 6 hrs/night. We need 7-8 to maintain total health
- Students; sleep before and after learning, not all nighters. MRI studies indicate a 40% decrease in brain's ability to make new memories



Possible Reasons for your Fatigue

- Chronotype: are you an early bird or night owl? If your a night owl and don't fall asleep early enough to get your 7-8 hours of restful sleep, your fighting your natural circadian rhythm.
- Fragmented sleep/ snooze alarm
- Bedroom environment/ blue light
- Spouse behavior
- Alcohol / caffeine



Jeff Foxworthy

You just might be a redneck if:

- You mowed the front lawn and found a car
- You consider 5th grade as your senior year
- You took a fishing pole to Seaworld
- Your family tree is a straight line with no branches



I Love my Alarm

- I love my alarm clock, I never hit the snooze button
- I'm so full of energy, lets get this day started
- I don't need any more sleep



You may have disturbed sleep if:

You slept 8 hrs but move like a sloth



You may have disturbed sleep if:

You need a coffee maker bedside so that you can make it to the bathroom in the morning



You may have disturbed sleep if:

The toothpicks bedside are not for hors d'oeuvres but to prop up your eyelids

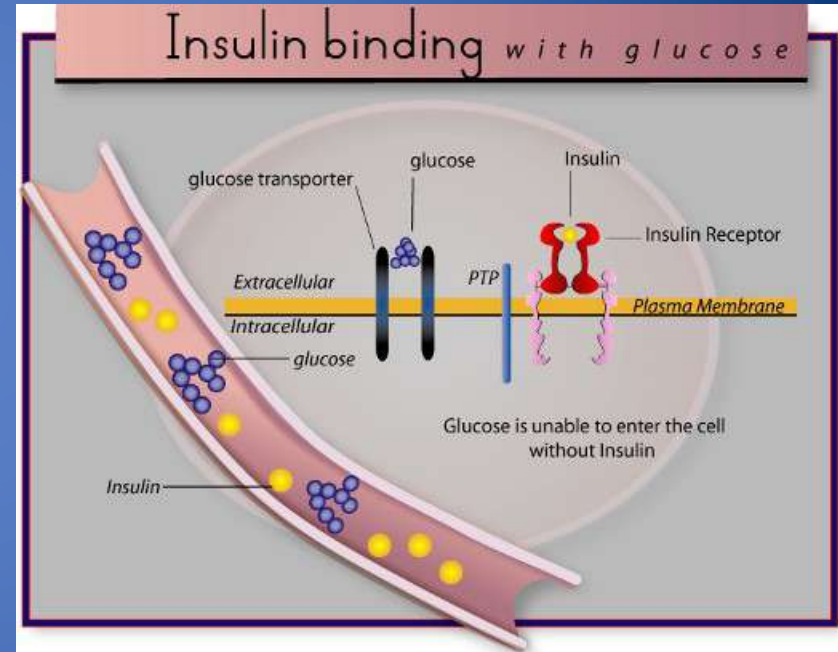


You may have disturbed sleep if:
If your alarm clock is NOT your best friend.



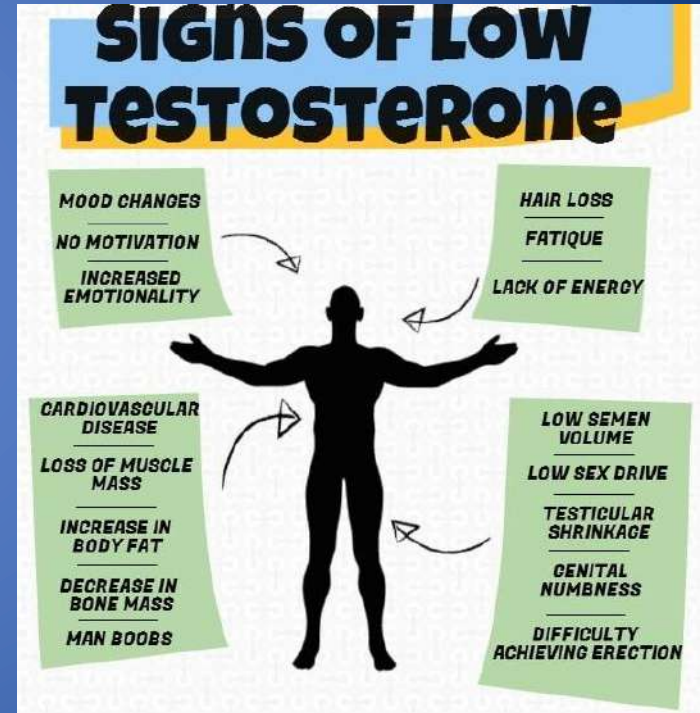
Diabetes

- Decreased sleep results in increased eating (ghrelin).
- Body can't handle increased sugar in the blood with an increased probability of developing type-2-diabetes
- When healthy, insulin, will manage the increased glucose in bloodstream but with decreased sleep, cell sensitivity to insulin decreases, with time ,pre-diabetic on to type-2-diabetes



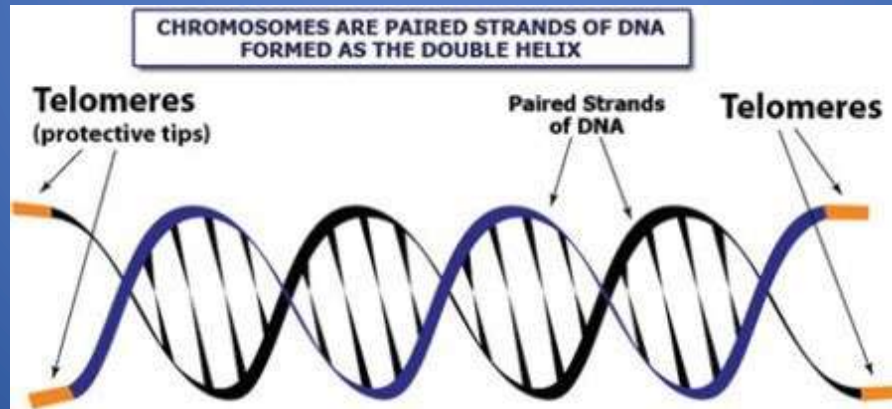
Reproductive System

- In men, decreased sleep results in decreased testosterone levels and ages a man 10-15 /yrs
- 29% lower sperm count with increased deformities
- Decreased testicular size, daily fatigue and loss of brain focus.
- Testosterone is also responsible for bone density, muscle and strntength



Genes---DNA

- Study by Dr. Derk-Jan Dijk, Surry sleep Research Center, restricted men and women to 6/hrs/day sleep for one week. Blood studies detected 711 distorted genes in these previously not involved subjects
- Spiral strands of DNA float in the cell nucleus, wound into chromosomes which are capped at each end with a Telomere. If damaged the spiral is weakened, genetic code affected. Reports relate to decreased sleep as a factor.



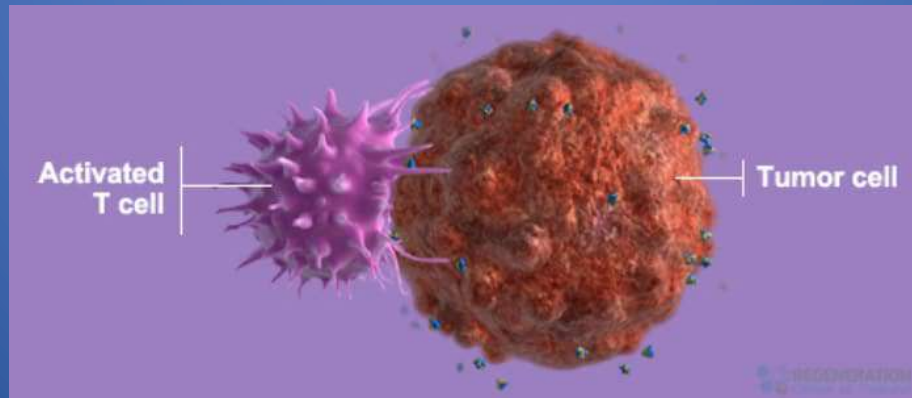
Reproductive System

- In women, decreased sleep results in a 20% drop in follicular releasing hormone required for conception
- Combining men and women as a couple, sleeping less than 6hrs/night may experience infertility or subfertility



Immune System

- Sleep fights infection and sickness by strengthening the immune system
- When your ill, you want to sleep
- 2002 study, sleep greatly affects your response to the flu vaccine
- Cancer; killer cells target malignant tumors
- Shift workers have increased odds of breast, prostate and colon cancer. Denmark



What's possible as the child matures ?

“Researchers are starting to evaluate these early issues with sleep disturbed breathing that may lead to anxiety, aggression, depression and peer to peer difficulties may be at the root of psycho-emotional problems experienced by todays teenagers”

“Gasp”/ Gelb, Hindin



Weight Gain and Obesity

- Loss of sleep affects two hormones;
- Leptin, sends the message that you've had enough to eat, no longer hungry
- Ghrelin, sends the message, eat as if it were your last meal
- Less than 7-8 hours of restful sleep unleashes Ghrelin into your system



Studies by Dr. Eve Van Cauter

- Healthy adults were given the opportunity to sleep 8-9 hours for 5 days and had their food consumption monitored.
- The study was changed to them sleeping 4-5 hours and had their food consumption monitored
- In the second stage they averaged an increased calorie intake of 300/cal/day

Restaurant Veggie Burger



2/5 of Ruby Tuesday's
Veggie Burger

Entire Portion
955 calories
52 g fat
76 g carbs

I think I found that 10-15 lbs your trying to loose

- With the average sleep time of 4-5 hours , electrode monitors noticed an increased Ghrelin output.
- 300 calories /day equals and additional 70,000 calories per year which relates to 10-15 lbs



Dental office/sleep concerns

- Reviewing the co-morbidities that are greatly influenced by sleep disturbances
- The effects poor sleep has on our daily lives and the lives of other
- Should we be the one of the main gatekeepers to help our patients/
- The ADA thinks we should by passing resolution 2017-17a-2017



Let's Get Practical

- Does including a concern over sleep fit into our present practice mode
- How to keep up with the standard of care expressed by the ADA and not disrupt our office routine. Sleep Survey
- If doctor, hygiene, staff wish to include sleep evaluation and treatment, where do we start.



Stop Bang Sleep Survey

- Snoring
- Tiredness
- Obstructive sleep apnea
- Blood pressure
- BMI
- Age
- Neck size
- Gender

STOP BANG

- EACH POSITIVE SCORE IS ONE POINT
- 0-2 low risk for obstructive sleep apnea
- 3-4 intermediate risk for obstructive sleep apnea
- 5-8 high risk for obstructive sleep apnea



STOP BANG*

Screening Questionnaire for Obstructive Sleep Apnea (OSA)

Find out if you are at risk for Sleep Apnea!

S . Snore	Have you been told that you <u>snore</u> ?	Yes	No
T . Tired	Are you often <u>tired</u> during the day?	Yes	No
O . Observed	Has anyone <u>observed</u> you stop breathing while sleeping?	Yes	No
P . Pressure	Do you have or are you being treated for high blood <u>pressure</u> ?	Yes	No

B . BMI	Is your <u>BMI</u> more than 35 kg/m ² ?	Yes	No
A . Age	Is your <u>age</u> 50 years old or older?	Yes	No
N . Neck	Is your <u>neck</u> circumference greater than 17" if male, or 16" if female?	Yes	No
G . Gender	Is your gender male?	Yes	No

► If you answered **YES** to 2 or more questions, it is very likely that you are at **significant risk for OSA**.

► If you answered **YES** to 3 or more questions, it is very likely that you have **moderate to severe OSA**.

Untreated moderate to severe Obstructive Sleep Apnea has been associated with hypertension, heart attack, stroke, diabetes, obesity, motor vehicle accidents, memory impairment, impotence, headaches as well as a decreased quality of life.

Please discuss your results with your physician. A sleep study or an evaluation by a sleep specialist may be warranted.

Name: _____ Date: _____

BMI TABLE			
Ht.	Wt. (lbs)	Ht.	Wt. (lbs)
4' 10"	167	5' 8"	230
4' 11"	173	5' 9"	237
5'	179	5' 10"	243
5' 1"	185	5' 11"	250
5' 2"	191	6'	258
5' 3"	197	6' 1"	265
5' 4"	204	6' 2"	272
5' 5"	210	6' 3"	279
5' 6"	216	6' 4"	287
5' 7"	223	6' 5"	295

Weight shown in this table represents those with a Body Mass Index of 35 for a specific height.

www.baysleep.com 866-88-SNORE (866-887-6673)

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*F. Chung, B. Yegneswaran, P. Liao, S. Chung, S. Vairavanathan, S. Islam, A. Khajehdehi, C.M. Shapiro; Anesthesiology 2008; 108:812-21

Practice Growth

- What is the most reliable, effective means to grow your practice with quality patients?
- Flyers
- Web presence
- Radio/TV spots
- Yellow pages
- Or.....



Word of Mouth

- Word of mouth/ patient referral has always been the prime source of new patients.
- Based on service and quality of the experience
- Does adding a sleep presence in your office add quality to the patient experience
- Does improving the quality of your patients total health set you above the crowd
- Does possibly changing a child's life count



Childrens Health

- What is the effect of disturbed sleep patterns on our children's mental and physical development?
- Explore the distressing increase in ADHD, Autism and Obesity in the worlds population



In Why WE Sleep, Dr. Walker states:

“At the birth of your first child, the doctor states, we’ve completed all our tests and your child is healthy. There’s just one thing, from this moment on and for the rest of your child's life he will routinely lapse into a state of apparent coma at times it may resemble death. While his body is still his mind will often be filled with stunning bizarre hallucinations. This state will consume one third of his life and I have no idea why he’ll do it or what it’s for. Good Luck”



36 Wives
100 Children

3/100 Obstructive Sleep Apnea

17/100 Obesity

12/100 Snoring

2/100 Autism

7/100 ADHD

7/100 Asthma

48

“GASP” Michael Gelb

- Improper breathing and disturbed sleep patterns affect our health, mood, energy, focus and function and if untreated lead to multiple systemic disorders
- Non-restorative sleep is the culprit that can increase the degree of co-morbidities
- In short, a good place to start; clinically screen for a high arched palate, short lingual frenum,
- Survey (Stop-Bang) kids (Bears or PSQ)
- Refer or treat



BEARS Sleep Screening Tool

kelty mental health
resource centre



	TODDLER/PRESCHOOL (2-5 YEARS)	SCHOOL-AGED (6-12 YEARS)	ADOLESCENT (13-18 YEARS)
B EDTIME PROBLEMS	Does your child have any problems going to bed? Falling asleep?	Does your child have any problems at bedtime? (P) Do you have any problems going to bed? (C)	Do you have any problems falling asleep at bedtime? (C)
E XCESSIVE DAYTIME SLEEPINESS	Does your child seem overtired or sleepy a lot during the day? Does he/she still take naps?	Does your child have difficulty waking in the morning, seem sleepy during the day or take naps? (P) Do you feel tired a lot? (C)	Do you feel sleepy a lot during the day? In school? While driving? (C)
A WAKENINGS DURING THE NIGHT	Does your child wake up a lot at night?	Does your child seem to wake up a lot at night? Any sleepwalking or nightmares? (P) Do you wake up a lot at night? Have trouble getting back to sleep? (C)	Do you wake up a lot at night? Have trouble getting back to sleep? (C)
R EGULARITY AND DURATION OF SLEEP	Does your child have a regular bedtime and wake time? What are they?	What time does your child go to bed and get up on school days? Weekends? Do you think he/she is getting enough sleep? (P)	What time do you usually go to bed on school nights? Weekends? How much sleep do you usually get? (C)
S NORING	Does your child snore a lot or have difficult breathing at night?	Does your child have loud or nightly snoring or any breathing difficulties at night? (P)	Does your teenager snore loudly or nightly? (P)

(P) Parent-directed question (C) Child-directed question

Reproduced with permission from: "A Clinical Guide to Pediatric Sleep: Diagnosis and Management of Sleep Problems" by Jodi A. Mindell and Judith A. Owens; 2003; Lippincott Williams & Wilkins.

Pediatric Sleep Questionnaire

Pediatric Sleep Questionnaire

Name: _____ Age: _____ Gender: Male Female

While Sleeping Does Your Child:

- ☐ Snore more than half the time ☐ Have heavy or Loud Breathing
- ☐ Always Snore ☐ Have trouble breathing or
Struggle to Breathe
- ☐ Snore Loudly
- ☐ Have you ever seen your child stop breathing during the night?

Does Your Child...?

- ☐ Tend to Breathe through the Mouth during the day
- ☐ Have a Dry Mouth on waking up in the morning
- ☐ Occasionally Wet the bed
- ☐ Grind their Teeth while sleeping ☐ Are there bite problems or crowded teeth
- ☐ Wake up Unrefreshed in the morning
- ☐ Have a problem with Sleepiness during the day
- ☐ Has a teacher or other individual commented that your child appears Sleepy during the day
- ☐ Is it Hard to Wake your child in the morning
- ☐ Does your child wake up with Headaches in the morning
- ☐ Did your child stop Growing at a normal rate at any time since birth
- ☐ Is your child Overweight What is their weight _____pounds & height _____
- ☐ Does your child complain of Restless/Achy legs when asleep or in bed
- ☐ Do your child's arms and legs "twitch" during sleep
- ☐ Does your child have frequent Nightmares (more than one per week) that may disturb him/her during the day

Avon Longitudinal Study

Dr. Karen Bonuck

- 11,000 children were followed for 7 years from birth onward.
- Bonuck and colleagues discovered a clear association between sleep-disordered breathing and high rates of ADHD along with high rates of anxiety, depression and aggressive behavior

Avon Study

- SDB is common in childhood, parents reported on child's snoring, mouth breathing and apnea
- SDB was associated with behavioral difficulties was associated with 40% of 4/yr/olds and 60% of 7/yr/olds. Mostly demonstrated as inattentiveness and hyperactivity



Sad Statistic

- Child aged 2-3 yrs/old diagnosed with ADHD should be evaluated for sleep, ability to breathe through the nose, facial tone, high ,vaulted palate, short lingual frenum and jaw development since;
- Centers for Disease control found 100,000 toddlers in the US are being treated with medications (Ritalin, Adderall)



Rambaud, Caroline, Guillemineault, European Journal of Pediatrics, September 2012

- “Death”, nasomaxillary complex and sleep in young children.
- 7 infants and children who died sudden deaths and 7 children who had sleep disordered breathing
- Results; every child who died abruptly had the kind of abnormal facial development that leads to blocked airways, swelling of the nasal passages and sleep disordered breathing..high arched palates, short lingual frenum.
- **Should we be concerned /how can we help ?**



Redline et al “Risk Factors for SDB in Children, Associations with Obesity, Race, and Respiratory Problems

- Risk factors are higher for children who are obese, children who's parents smoke and African-American children
- Why is further research needed?
- **Children's very lives depend on it !!!**



ADHD/ Treatment

- Psycho-stimulants; Ritalin. Adderall (6yrs)
- Somehow they help the patient organize
- and focus
- Special accommodations at all school levels
- College students;
American College of Child and Adolescent Psychiatry

OR

- **Check your child for allergies and disturbed sleep**





Education

- Adina Wisconsin Study
- Responding to studies suggesting teens do not do well early in the morning inspired the school district to change school start times from 7:30 to 8:30.
- Results; grades went up, truancy decreased, as well as behavior problems. SAT scores went up several hundred points on average
- Teen auto accidents decreased 70%
- When sleep is abundant, minds flourish



- Bill text- SB-328
- Pupil attendance school start time
- Rejected by the Ca. Senate
- 80% of Ca. High schools start before 8:30



Etiology of ADHD

- To date the Causes of ADHD in children is unknown, some research suggests a genetic component, brain injury incurred during birth due to decrease in oxygen, consumption of alcohol during pregnancy and perhaps food additives.
- Epigenetic changes from pollution, allergies, asthma and airway obstruction



Negative Information

- If you suspect you or your child may have disordered breathing or ADHD symptoms don't accept;
- Pain problems don't go away
- You don't need a frenulum release
- ADHD is a disease, it won't go away
- Orthodontics /dental appliances won't help
- We'll just watch the tonsils/adenoids
- Jaw is too narrow, extract several permanent teeth





Lets Review

Sleep has been a mystery throughout the ages

Disturbed sleep contributes to numerous co-morbidities

Children who suffer with ADHD may have a chance to rebound

ADA resolution 17a 2017 advises all dental practices to become aware of the need to add a sleep survey to your office examination

Review

- If you desire to treat other than refer your patients, it's necessary to be committed to extended CE courses
- SENATE BILL 328, later school start times
- SHOULD YOUR DENTAL OFFICE BE CONCERNED

LOONEY TUNES

